



VOLUME 1, ISSUE 6

# CaH2Net Update

WINTER 2006

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## SPECIAL POINTS OF INTEREST:

- GM and BMW have made significant announcements about placing hydrogen vehicles in California.
- The ARB conducted focus groups to learn about consumer's awareness of alternative fuels and advanced technology vehicles.
- The Board approved the ZBUS proposal.

## SENATE BILL 1505 SETS ENVIRONMENTAL STANDARDS FOR HYDROGEN FUEL

Earlier this year, Governor Schwarzenegger signed Senate Bill (SB) 1505 putting the environmental requirements described in the California Hydrogen Highway Blueprint Plan into statute.

SB 1505 ensures that hydrogen production is done in a clean and environmentally responsible manner. Specifically, by July 1, 2008 the Air Resources Board (ARB) must develop and adopt hydrogen fuel regulations guaranteeing specific environmental requirements are met during the production and distribution of hydrogen fuel for state funded stations. The requirements are:

- 30% reduction in well to wheel greenhouse gas emissions compared to

average new gasoline vehicles;

- 50% reduction in well to tank smog forming emissions compared to average motor gasoline and;
- to the maximum extent possible a reduction in relevant toxic air contaminants.

These emissions requirements must be applied to all hydrogen fuel facilities, not just state funded stations, when the mass of dispensed hydrogen exceeds 3,500 metric tons per year.

Specific exemptions are allowed for small demonstration projects after approval by the executive officer.

The ARB will also review the renewable energy and environ-

mental requirements every four years and if necessary, may make them more stringent. In addition, by July 1, 2009, the ARB will create a handbook for stakeholders about complying with the requirements.

For more information, contact Ben Deal at (916) 322-8449.

## ARB'S USE OF THE FORD FUEL CELL VEHICLE EXPANDS

Last August, ARB participated in the Nevada County Fair, approximately 60 miles from Sacramento, and displayed a Ford Focus Fuel Cell vehicle (FCV). The Focus shared a booth with the Northern Sierra Air Quality Management District and a stationary fuel

cell and received significant attention.

When the fair came to a close, the ARB driver shuttled his fellow vanpool participants in the Ford Focus FCV giving the four ARB staff an emissions free commute.



Ford Focus Fuel Cell vehicle with commuters from Grass Valley.

## RECENT AND UPCOMING EVENTS

### CaFCP Road Rally 2006

Road Rally 2006 was a success! During the four-day rally that started at the Orange County Auto Show and ended at the Coronado Speedfest more than 1000 people rode in a fuel cell vehicle and hundreds more learned about hydrogen and fuel cell vehicle technology.

For more information about California Fuel Cell Partnership (CaFCP) events, please visit [cafcp.org/events.html](http://cafcp.org/events.html).

### The San Francisco Auto Show

The month of November closed with the San Francisco International Auto Show. Held for eight days around the Thanksgiving holiday, this annual show brought in people by the thousands.

ARB joined AAA's Greenlight Initiative Showcase displaying a Ford Focus Fuel Cell vehicle with five other alternative fuel vehicles (electric, hybrid, plug in hybrid, natural gas, and vegetable oil). A press event showcased these vehicles

on local television networks, which helped bring in a constant stream of attendees inquiring about hydrogen and fuel cell technology.

### City of Santa Monica ALTCAR event

In conjunction with the Los Angeles Auto Show, the City of Santa Monica assembled a variety of alternative fuel vehicles for public display. The event was very well attended and should make a return appearance in 2007.

### Upcoming Events

*San Jose International Auto Show*

*January 11-15, 2007*

<http://www.motortrendautoshow.com/sanjose/>

*REXPO III*

*January 16-18, 2007*

[www.rexpoIII.com](http://www.rexpoIII.com)

*Green Technology Expo*

*March 13-14, 2007*

[www.green-technology.org/gcsummit.htm](http://www.green-technology.org/gcsummit.htm)



Attendees of the Speedfest in Coronado filling out CaFCP surveys in the CaFCP booth.

Photo courtesy of the CaFCP.



Fuel cell vehicles on the Speedfest track.

Photo courtesy of the CaFCP.

Keep in touch with the latest news on the CaH2Net by signing up for our list serve at <http://www.hydrogenhighway.ca.gov/sub2hwy.html>

## GM AND BMW MAKE HYDROGEN VEHICLE ANNOUNCEMENTS

General Motors recently announced it will build more than 100 Chevrolet Equinox Fuel Cell vehicles and will begin placing them with customers in the fall of 2007, as part of a comprehensive deployment plan dubbed "Project Driveway." A variety of drivers – in differing driving environments – will operate these vehicles and refuel with hydrogen in three geographic areas: California, the New York metropolitan area and Washington D.C.

The "Project Driveway" market test will

provide comprehensive insight into all aspects of the customer experience, including reaction to the exciting, smooth and quiet performance of a fuel cell vehicle, and refueling with clean hydrogen gas.

To learn more about the GM program go to: [www.gm.com/company/gmability/adv\\_tech/100\\_news/fc\\_fleet\\_launch\\_091806.html](http://www.gm.com/company/gmability/adv_tech/100_news/fc_fleet_launch_091806.html)

BMW has also announced that it will produce a limited number of hydrogen-powered luxury performance cars in 2007.

The cars will be driven by "selected users" in the United States and other countries. A total of 100 will be built with about 25 going to the United States.

The selected drivers could be charged a monthly fee for the use of the car. They would also need to live in an area with a reasonable number of available hydrogen fueling stations.

To learn more about the BMW program go to: [www.hydrogen-cars.biz/bmw-hydrogen7.htm](http://www.hydrogen-cars.biz/bmw-hydrogen7.htm)

## ZBUS REGULATION APPROVED BY THE AIR RESOURCES BOARD

At the October 19<sup>th</sup> hearing of the Air Resources Board, the Board approved modifications to the California Zero Emission Bus (ZBUS) regulation. The Board adopted the following changes:

- A three year delay, to 2011, in the purchase requirement for transit agencies on the diesel path and a two year delay, to 2012, in the purchase requirement for the alternative fuel path transit agencies.
- A mandatory Advanced Demonstration of fuel cell buses for the diesel path transit agencies beginning in 2009.
- Transit agencies who reached 200 buses in their fleet during the purchase requirement period will be allowed a 3 to 5 year transitional period before being under mandate

of the regulation.

Over 20 different individuals representing transit agencies, non-governmental organizations (NGOs), fuel cell manufacturers, and private interests testified at the board hearing.

For more information, contact Lesley Crowell at (916) 323-2913.



AC Transit Fuel Cell Bus



The Santa Clara Valley Transportation Authority's hydrogen fuel cell bus fills up at a hydrogen station in San Jose.

Photo courtesy of the CaFCP.

## EXPLORING CONSUMER'S AWARENESS IN ADVANCED TECHNOLOGY VEHICLES

In Fall 2006, the Air Resources Board (ARB) carried out a series of focus groups to explore awareness and interest among California consumers in advanced technology vehicles and alternative fuels. A total of eight focus groups were held in Fresno, Sunnyvale, Riverside and Long Beach, with one session dedicated to fleet managers having prior experience with clean technologies.

The consumer groups revealed a lack of knowledge and understanding about alternative fuels and advanced technology vehicles, and for most participants clean vehicles were not favored over traditional vehicles. Hybrids were the most well known, but prevailing beliefs about them were that they were small, unattractive, lacking in power and performance, expensive, and not able to meet a family's vehicle needs.

There was also a general lack of trust that the vehicles would be reliable, parts would be reasonably priced, mechanics would be trained, and the vehicles would have resale value.

The fleet group explored experiences in using various advanced technologies over time. This group was supportive overall of clean technologies, and considered their role as early demonstrators to be important. Some frustrations were expressed with the expense, inconvenience and added work load of incorporating new technologies and fuels into their organizations.

Findings from the focus groups will be included in ARB's CaH2Net report to the legislature in December 2006. They also will be the foundation for ARB's outreach efforts in 2007 which will be funded with money from the Alternative Fuel Incentive

Program (AFIP) per Chapter 48, Statutes of 2006 (Assembly Bill 1811).

It is clear that the ARB needs to target future outreach to demonstrate technical performance, ensure fueling stations are available and work to educate consumers on the positive attributes of advanced technology, alternative fuel vehicles.

For more information about AFIP go to [arb.ca.gov/fuels/altfuels/incentives/incentives.htm](http://arb.ca.gov/fuels/altfuels/incentives/incentives.htm)

For more information about the focus groups, or to request a copy of the final report, contact Melissa Meuser at (916) 327-2950 or [mmeuser@arb.ca.gov](mailto:mmeuser@arb.ca.gov).

[www.HydrogenHighway.ca.gov](http://www.HydrogenHighway.ca.gov)

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*The California Hydrogen Highway Network is an initiative to establish hydrogen infrastructure to support commercialization of sustainable, zero and near zero emission hydrogen vehicles.*

*The CaH2Net is a key part of California's strategy to achieve the State's vision of a secure energy future that simultaneously addresses our environmental, public health and economic challenges working in partnership with other components of the State's programs to advance energy efficiency and renewable energy.*

## DEVELOPING QUALITY SPECIFICATIONS FOR HYDROGEN

Hydrogen can be produced from many domestic sources of energy, including fossil fuels, such as natural gas and coal; and renewable resources such as solar radiation, wind, biomass, and nuclear energy.

Due to this diversity of the sources of hydrogen fuel, it is imperative that quality standards for purity be put into place. This is because contaminants such as ammonia, carbon monoxide, carbon dioxide, formaldehyde, formic acid, hydrocarbons, sulfur compounds and water can harm catalyst-coated membranes inside the fuel cell reducing its efficiency, performance and reliability.

### **The Regulatory Process**

In order to develop a quality standard, Air Resources Board (ARB) entered into an interagency agreement with the Department of Food and

Agriculture (CDFA) for the development of "Specifications for Hydrogen Fuels for Use in Internal Combustion Engines and Fuel Cells in Motor Vehicles" by January 2008 as required by Chapter 91, Statutes 2005 (SB 76).

To date, CDFA is on track to meet the timeline requirements. They have developed a proposed draft regulation and continue to meet with affected stakeholders to refine the standards.

When CDFA is closer to a final proposal they will submit it to the Office of Administrative Law (OAL) for a 45-day comment period. If significant comments and changes are necessary the proposal would be resubmitted for a second forty-five day comment period. If there are minor modifications, they could be handled with a fifteen day commenting period.

The process is complete when

CDFA staff has addressed all the comments and submitted the final statement of reasons to the OAL.

For more information about the proposal or the regulatory process, please contact Mr. John Mough at (916) 229-3064, or [jmough@cdfa.ca.gov](mailto:jmough@cdfa.ca.gov).